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Mortality: Causes of death, 2007

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Report on the Demographic Situation in Canada

Mortality: Causes of death, 2007

Demographic Analysis and Projections Section

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.. not available for a specific reference period

... not applicable

0 true zero or a value rounded to zero

0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded

^{p} preliminary

^{r} revised

x suppressed to meet the confidentiality requirements of the *Statistics Act*

^{E} use with caution

F too unreliable to be published

Mortality: Causes of death, 2007

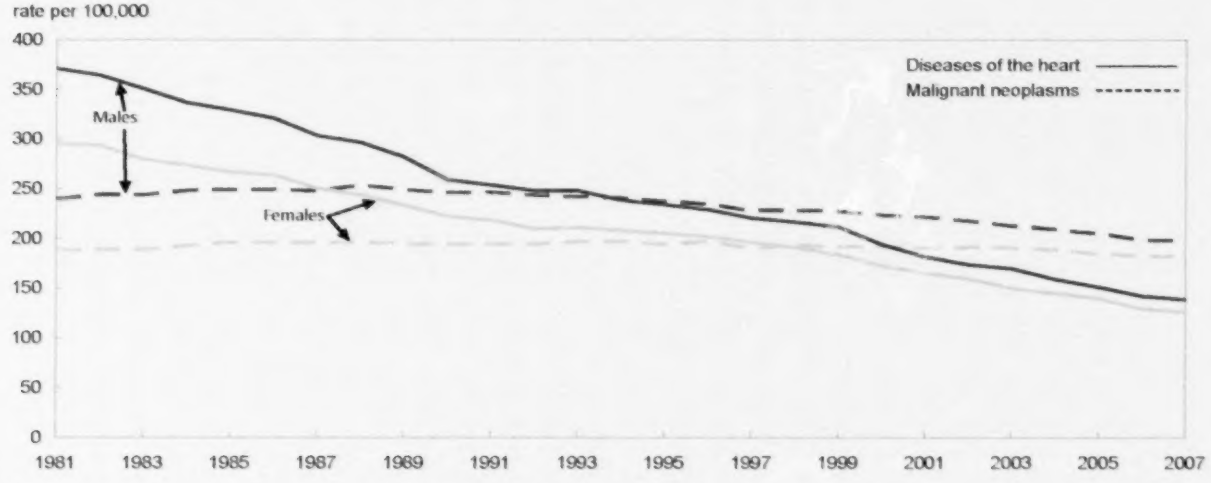
This section on causes of death examines the leading causes for men and women in Canada, including changes during the past several decades, as well as current patterns by age group. For both men and women, as in many previous years, the leading causes of death between 2005 and 2007 were malignant neoplasms (or cancer) and diseases of the heart (often referred to as heart disease). Overall, mortality due to these two leading causes accounted for more than half (51.1%) of all deaths in 2007 and have been declining for both sexes although mortality rates are decreasing at a more rapid pace for heart disease.

Leading causes of death

The trend first observed for men in 1994, that cancer claimed more lives than heart disease, was still evident between 2005 and 2007 (Table 1). As deaths due to heart disease decreased more quickly than did those from cancer, the gap in the mortality rates of these two causes continues to grow in recent years. In 2005, cancer was responsible for 204.8 deaths per 100,000 men while there were 151.2 deaths per 100,000 men from heart disease (Figure 1). By 2007, there were 197.6 cancer deaths per 100,000 men, an overall decline which has occurred since the late 1980s and a further drop to 138.6 deaths per 100,000 men in 2007 due to heart disease. This is a substantial change from 1981 when deaths due to heart disease accounted for 370.5 deaths per 100,000 men while 239.7 deaths per 100,000 men were the result of cancer.

The evolution in causes of death for women has followed the same trend as for men, and since 1998 the mortality rate from cancer for women surpassed that from heart disease. In both 2006 and 2007, there were 181.9 deaths

Figure 1
Standardized mortality rate from malignant neoplasms (cancer) and from diseases of the heart (heart disease) by sex, Canada, 1981 to 2007



Notes: Malignant neoplasms: Causes 140 to 208 of the 9th revision of the I.C.D. (International Classification of Diseases) or causes C00 to C97 of the 10th revision of the I.C.D.

Diseases of the heart: Causes 390 to 398, 402, 404 and 410 to 429 of the 9th revision of the I.C.D. or causes I00 to I09, I11, I13 and I20 to I51 of the 10th revision of the I.C.D.

9th revision of the I.C.D. from 1981 to 1999 and 10th revision of the I.C.D. since 2000.

Rate (per 100,000) standardized on the age and sex structure of the 2001 population. The rates are not comparable between sexes but the trends are comparable.

Sources: Statistics Canada, Health Statistics Division, Vital Statistics and Demography Division, Demographic Estimates.

Table 1
Mortality rates of leading causes of death by sex, Canada, 1981 to 2007

Sex and year	Malignant neoplasms[1]	Diseases of heart[2]	Cerebrovascular diseases[3]	Chronic lower respiratory diseases[4]	Accidents (unintentional injuries)[5]
	rate per 100,000				
Males					
1981	239.7	370.5	75.7	43.3	64.1
1986	249.1	320.5	59.5	48.5	47.4
1991	246.2	253.6	51.6	45.3	41.8
1992	243.5	248.2	50.5	42.8	40.2
1993	241.8	248.2	52.7	45.3	41.1
1994	240.4	238.4	51.1	44.0	39.4
1995	237.6	234.0	50.8	42.6	38.6
1996	234.4	228.8	48.8	41.6	37.2
1997	228.0	220.2	48.8	41.1	35.9
1998	228.3	216.6	46.2	41.7	36.3
1999	227.2	211.0	44.2	40.1	37.2
2000	223.5	193.9	43.3	37.1	35.1
2001	221.4	181.5	41.5	35.4	34.6
2002	217.2	173.2	40.1	34.0	35.0
2003	212.6	169.8	38.3	33.1	34.1
2004	209.1	159.1	34.8	31.2	33.2
2005	204.8	151.2	32.5	31.4	34.8
2006	198.5	141.8	30.8	27.7	33.6
2007	197.6	138.6	29.7	29.0	34.5
Females					
1981	188.0	295.1	100.1	14.0	29.9
1986	195.6	263.6	83.6	20.6	26.5
1991	194.9	218.8	70.1	23.3	23.6
1992	194.1	209.8	70.1	23.8	22.5
1993	196.5	210.6	72.1	26.0	23.5
1994	197.0	208.0	69.2	25.6	22.3
1995	193.8	205.1	67.9	27.2	23.1
1996	197.4	202.0	67.0	27.7	22.7
1997	190.0	196.0	67.2	28.4	22.4
1998	193.1	190.9	63.8	29.1	21.9
1999	191.7	183.9	61.2	29.4	22.5
2000	191.8	172.8	60.4	28.2	21.6
2001	190.1	165.1	58.0	27.7	20.5
2002	191.2	159.6	56.0	27.7	22.2
2003	190.2	149.9	53.5	28.4	21.8
2004	188.7	144.7	50.3	27.8	21.1
2005	184.8	139.7	46.5	28.3	21.3
2006	181.9	128.9	43.7	25.9	21.7
2007	181.9	126.1	43.2	27.5	21.5

1. Causes 140 to 208 of the 9th revision of the I.C.D. (International Classification of Diseases) or causes C00 to C97 of the 10th revision of the I.C.D.
2. Causes 390 to 398, 402, 404 and 410 to 429 of the 9th revision of the I.C.D. or causes I00 to I09, I11, I13 and I20 to I51 of the 10th revision of the I.C.D.
3. Causes 430 to 434 and 436 to 438 of the 9th revision of the I.C.D. or causes I60 to I69 of the 10th revision of the I.C.D.
4. Causes 490 to 494 and 496 of the 9th revision of the I.C.D. or causes J40 to J47 of the 10th revision of the I.C.D.
5. Causes E800 to E868 and E880 to E929 of the 9th revision of the I.C.D. or causes V01 to X59 and Y85 to Y86 of the 10th revision of the I.C.D.

Notes: 9th revision of the I.C.D from 1981 to 1999 and 10th revision of the I.C.D. since 2000.
Rate (per 100,000) standardized on the age and sex structure of the 2001 population. The rates are not comparable between sexes but the trends are comparable.

Sources: Statistics Canada, Health Statistics Division, Vital Statistics and Demography Division, Demographic Estimates.

per 100,000 women from cancer (down from 184.8 deaths per 100,000 women in 2005). There were 126.1 deaths per 100,000 women due to heart disease in 2007 (down from 128.9 in 2006 and 139.7 in 2005). Close to three decades earlier, in 1981, there were 295.1 deaths per 100,000 women due to heart disease and 188.0 deaths per 100,000 women from cancer.

The third leading cause of death for women in 2007, and the fourth leading cause of death for men, was cerebrovascular diseases (or stroke). Again, there have been large decreases in the mortality rate in the data recorded

since 1981. For men the mortality rate was 75.7 deaths per 100,000 population in 1981 falling to 29.7 deaths per 100,000 population in 2007. Women have a higher mortality rate from strokes than do men and the corresponding drop was from 100.1 deaths per 100,000 population to 43.2 deaths per 100,000 population from 1981 to 2007.

The mortality rate from unintentional injuries (or accidents) remained fairly stable since the early 2000s for men and the late 1990s for women, although it has been higher for men than for women for all the years recorded since 1981. It was the third leading cause of death for men in 2007, with 34.5 deaths per 100,000 men compared to 21.5 deaths per 100,000 women, for whom it was the fifth leading cause of death. The mortality rate due to accidents has dropped compared with several decades ago, especially for men. In 1981 the mortality rate was 64.1 deaths per 100,000 men while it was 29.9 deaths per 100,000 women.

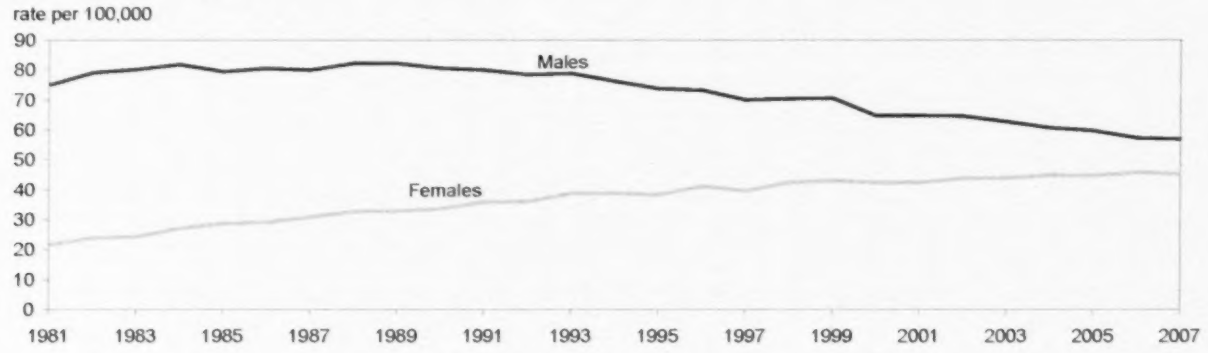
The fourth leading cause of death for women, and the fifth leading cause of death for men, was chronic lower respiratory diseases. In 2007, the mortality rate was 29.0 and 27.5 deaths per 100,000 men and women, respectively. While the 2007 rate is relatively close for men and women, the mortality rate due to this cause of death has evolved differently for men and women in recent decades. In 1981, the mortality rate was 43.3 deaths per 100,000 men, increasing during the 1980s to a high of 48.5 deaths per 100,000 men in 1986. Since that time there has been an overall decrease, although it did increase slightly from 27.7 deaths per 100,000 men in 2006 to 29.0 deaths per 100,000 men in 2007. For women, the 1981 morality rate was 14.0 deaths per 100,000 population. This rate rose fairly steadily throughout the 1980s and 1990s reaching a high of 29.4 deaths per 100,000 population in 1999. After some fluctuation throughout the 2000s, the rate fell slightly to 25.9 deaths per 100,000 women in 2006 before slightly increasing again to 27.5 deaths per 100,000 women in 2007.

Other causes of death

In 2007, the sex differential that had historically existed with higher mortality rates for men than for women due to heart disease had been largely reduced. While mortality rates from many of the leading causes remained higher for men than women, there are some trends which have developed in recent years. Specifically, mortality rates for women due to malignant neoplasms of the trachea, bronchus and lung (or cancer of the respiratory system) have been on an overall upward trajectory, unlike men, who have experienced an overall decline in mortality rates from this cause. This is because younger cohorts of women have a much higher prevalence of smoking early in life compared with older cohorts of women. In fact, although mortality rates from cancers of the respiratory system for women were still lower than men in 2007 (45.1 deaths per 100,000 women and 56.8 deaths per 100,000 men) the mortality rate for women from this cause was more than double the 1981 rate of 21.6 deaths per 100,000 women (Figure 2). However, after more than a decade of increase in the mortality rates from this cause for women, there

Figure 2

Standardized mortality rate for cause of death from malignant neoplasms of trachea, bronchus and lung by sex, Canada, 1981 to 2007



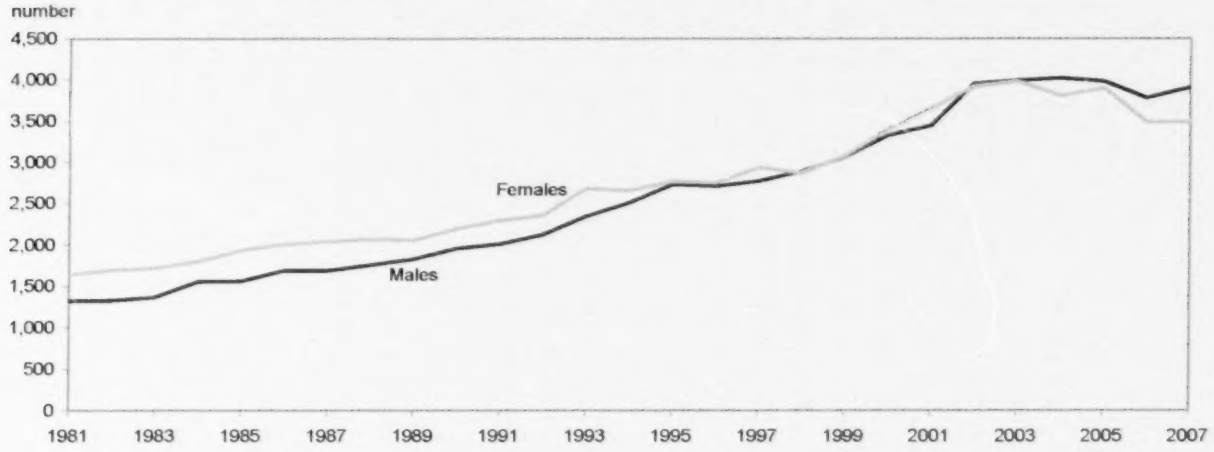
Notes: Causes 162 of the 9th revision of the I.C.D. or causes C33 to C34 of the 10th revision of the I.C.D.

9th revision of the I.C.D. from 1981 to 1999 and 10th revision of the I.C.D. since 2000.

Rate (per 100,000) standardized on the age and sex structure of the 2001 population. The rates are not comparable between sexes but the trends are comparable.

Sources: Statistics Canada, Health Statistics Division, Vital Statistics and Demography Division, Demographic Estimates.

Figure 3
Number of deaths due to diabetes mellitus (diabetes) by sex, Canada, 1981 to 2007



Notes: Causes 250 of the 9th revision of the I.C.D. or causes E10 to E14 of the 10th revision of the I.C.D.
9th revision of the I.C.D. from 1981 to 1999 and 10th revision of the I.C.D. since 2000.
Source: Statistics Canada, Health Statistics Division, Vital Statistics.

was a slight decline in 2007 compared with the previous year (45.7 deaths per 100,000 women in 2006). In contrast, after peaking in the late 1980s at 82.2 deaths per 100,000 men, the male mortality rate from these types of cancers has been on an overall decline for close to 20 years. The growing convergence between male and female mortality rates due to cancers of the respiratory system partially explains the narrowing gap in life expectancy between the sexes over the last three decades.

There are changes that have occurred in patterns of other causes of death which may be at least partially related to an aging population. Deaths due to chronic diseases such as diabetes have accounted for an overall increasing number of deaths from the early 1980s to the early 2000s for both men and women. However, there has been a downward trend for both sexes over the past few years but it is too soon to determine if this is a new trend, perhaps as the result of greater awareness and publicity campaigns, or simply annual fluctuations. In 2007, there were 7,400 deaths related to diabetes, accounting for 3.1% of all deaths that year (Figure 3). This is lower than in 2003 when there were close to 8,000 deaths.

Alzheimer's disease is another example of a chronic disease that could affect a growing number of older persons and potentially account for more deaths as the population ages. While it is not a new disease, it is now differentiated from overall senile dementia. It has only been classified separately since 1979 and further conceptual changes over time have resulted in difficulty making historical comparisons prior to 2000. In 2007, there were 5,900 deaths that were attributed to Alzheimer's disease, which represented 2.5% of all deaths that year (3.6% of all deaths for women and 1.5% of all deaths for men). The majority of deaths from Alzheimer's disease (82.4%) occurred for seniors aged 80 years and over.

Leading causes of death by age group

The leading cause of death in 2007 varied according to age groups. For newborns in their first year of life, the leading cause of death was congenital malformations, deformations and chromosomal abnormalities. In total, deaths from these causes accounted for 21.7% of all deaths to babies during the first year of life (Table 2). The second leading cause of death for infants was disorders related to short gestation and low birth weight which were responsible for 13.2% of infant deaths in 2007.

Table 2
Leading cause of death by age group, Canada, 2007

Age group	Causes	Percentage
Leading cause of death		
0 to 1 year	Congenital malformations, deformations and chromosomal abnormalities	21.7
1 to 14 years	Accidents (unintentional injuries)	29.0
15 to 24 years	Accidents (unintentional injuries)	42.3
25 to 44 years	Accidents (unintentional injuries)	22.7
45 to 64 years	Malignant neoplasms	44.5
65 to 79 years	Malignant neoplasms	40.4
80 years and over	Diseases of heart	25.6
Second leading cause of death		
0 to 1 year	Disorders related to short gestation and low birth weight, not elsewhere classified	13.2
1 to 14 years	Malignant neoplasms	17.4
15 to 24 years	Intentional self-harm (suicide)	21.1
25 to 44 years	Malignant neoplasms	20.8
45 to 64 years	Diseases of heart	17.3
65 to 79 years	Diseases of heart	20.0
80 years and over	Malignant neoplasms	19.2
Third leading cause of death		
0 to 1 year	Fetus and newborn affected by maternal complications of pregnancy	9.6
1 to 14 years	Congenital malformations, deformations and chromosomal abnormalities	8.4
15 to 24 years	Malignant neoplasms	6.8
25 to 44 years	Intentional self-harm (suicide)	15.1
45 to 64 years	Accidents (unintentional injuries)	5.2
65 to 79 years	Chronic lower respiratory diseases	5.4
80 years and over	Cerebrovascular diseases	8.1

Notes: Diseases of heart: Causes I00 to I09, I11, I13 and I20 to I51 of the 10th revision of the I.C.D.
Malignant neoplasms: Causes C00 to C97 of the 10th revision of the I.C.D.
Chronic lower respiratory diseases: Causes J40 to J47 of the 10th revision of the I.C.D.
Accidents (unintentional injuries): Causes V01 to X59 and Y85 to Y86 of the 10th revision of the I.C.D.
Cerebrovascular diseases: Causes I60 to I69 of the 10th revision of the I.C.D.
Fetus and newborn affected by maternal complications of pregnancy: Cause P01 of the 10th revision of the I.C.D.
Disorders related to short gestation and low birth weight, not elsewhere classified: Cause P07 of the 10th revision of the I.C.D.
Congenital malformations, deformations and chromosomal abnormalities: Causes Q00 to Q99 of the 10th revision of the I.C.D.
Sources: Statistics Canada, Health Statistics Division, Vital Statistics and Demography Division, Demographic Estimates.

For individuals from age one to age 44, the leading cause of death was from accidents, particularly for those in their late teens and early twenties. More than two-fifths of 15 to 24 year olds (42.3%) died from such causes, as did close to three in ten (29.0%) children aged one to 14 years and 22.7% of 25 to 44 year olds. While the second leading cause of deaths for both one to 14 year olds and 25 to 44 year olds was cancer (17.4% and 20.8%, respectively), for those aged 15 to 24 years, it was suicide or intentional self-harm, accounting for more than one in five (21.1%) deaths to this age group in 2007. Suicide was the third leading cause of death among 25 to 44 year olds, accounting for 15.1% of deaths in this age group in 2007.

For 45 to 64 year olds, cancer was the leading cause of death in 2007 (44.5% of all deaths) followed by heart disease (17.3%) and accidents (5.2%). For 65 to 79 year-olds, cancer caused 40.4% of all deaths for this age group followed by heart disease (20.0%) and chronic lower respiratory diseases (5.4%). More than three-fifths of all deaths in each of the 45 to 64 year age group (61.7%) and 65 to 79 year age group (60.3%) were attributed to the two causes of cancer and heart disease in 2007.

For people in their eighties and over, the leading cause of death was heart disease, accounting for 25.6% of all deaths to this age group in 2007. The second leading cause of death for seniors age 80 and over was cancer (19.2%) followed by stroke (8.1%).